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Hijacking Sorrow, Joy, Pleasure and Reward: A Philosophical Interpretive Framework for the Theory of Alcohol Addiction

Abstract. *This article offers a philosophical interpretation of the key concepts of alcohol addiction in neuroscience (the anhedonia hypothesis, the want-like system, the incentive salience hypothesis) and psychology (the rational choice model). A comprehensive, transdisciplinary review of the theories of alcohol addiction is performed and their applications to the treatment and recovery processes are discussed. As a core component, we reconstruct the experience to become habitual during subsequent alcohol misuse. As a result, the article proposes a philosophical theory for the broad interpretation of the concept of addiction as a reward system disorder with an application for cognitive and behavioral activity.*

Keywords: *alcohol addiction, brain reward system, addictive behavior, philosophy of psychiatry, hedonic homeostasis.*

Pagrindiniai žodžiai: *alkoholizmas, smegenų veiklos skatinamoji sistema, priklausomybės ligos, psichiatrijos filosofija, hedonistinė homeostazė.*

Introduction

Alcohol addiction is a transdisciplinary issue, which is considered from at least three disciplinary approaches. On the one hand, psychiatry, with the help of biochemistry and neurobiology, suggests that the work of neurotransmitters in the human brain is disrupted (Courtwright 2010; Koob, Volkow 2010; Panksepp, Knutson and Burgdorf 2002). On the other hand, psychology represents addiction as a disorder of choice (Heyman 2010) or thoughtless actions (a concept of cognitive behavioral therapy or CBT) (Beck, Dozois 2014; Kadden 2001; Kadden 2007; Riper et al. 2014). 'CBT attempts

to disrupt the learned association between drug-related cues or stimuli and drug craving or use by understanding and changing these behaviour patterns' (Ruiz, Strain and Lowinson 2011: 593). Finally, we can consider depth psychology, including psychoanalysis, psychodynamic psychotherapy (Cassidy, Shaver 2008; Schneider, Pierson and Bugental 2015). These branches of clinical psychology intend to remove the disharmony between different areas of the human mind. They also try to minimize many mental sufferings, such as alcohol addiction, by working with the unconscious (Flores 2001; Khantzian 2015a; Wurmser 1987). Similarly,

with this three-element scheme, a philosopher (Shelby 2016; Shelby, Fiala 2013) can model other alternatives of inner and outer structures in the architecture of the soul that are responsible for addiction and search for their balance. Alas, we will not do it without the verb “to try.” The borders between neurobiology, psychology and psychoanalysis are not clear (we mean their impact on human behaviors and not the difference between the disciplinary approaches). Therefore, any efforts to understand, change or correct an addictive behavior will have a probability of success but not success itself.

Our approach to grasp alcoholic addiction is philosophical for several reasons. Firstly, we frame the questions that lie in the shadows of the more specialized disciplines, such as neuroscience, clinical psychology and even sociology. According to neuroscience, the addiction is merely a disease of the brain; for psychology, it acts as an inability to make the right choices or as an expression of a disturbing thought; according to sociology, it becomes a sort of deviant behavior (Roman, Trice 1968; Blum 1984; Blum, Roman and Bennett 1989; Roman 2015). Quite contrary, we are seeking for a combination of these tactics and methods. Moreover, we do not ignore the cultural factors and we express doubts regarding the independence of addictive behavior from any disastrous impact of one’s social environment. We are going to discuss a domain of applicability of such philosophical concepts as the freedom of choice, self-perception of freedom, the free-will to the addiction studies. Second, we will explore the dissonance of addictive (and, in this sense, extremely egoistic) aspirations to the immediate

pleasure with such morally recognized priorities as an intrinsic value of human life, the right of the other (significant or not) to be happy. In describing the recover strategies, we will consider the difficulties of matching the hedonistic intentions with keeping the emotional balance. The conciliation of the personal hopes and desires with the realities of the society, which are often not friendly and not humanistic, is also an issue in focus. Third, we advocate for a trans-disciplinary approach to the research agenda of any addictive process. Each discipline develops its own way of study, which is defined by the borders of a given scientific field, the research interests and professional skills. However, the massive growth of knowledge (for example, we have recently found, with the help of Google Scholar, up to 4 000 articles on alcohol addiction published in 2016) has not filled the gaps in addiction studies. On the contrary – these gaps have become larger. Philosophy usually is ready to sacrifice the fullness, reliability and the probative value of knowledge for synthesis and a holistic view.

The special objective of this article is to suggest the insights that we have found from the philosophical reflections on the experience of alcohol addiction. We describe its subjectiveness comprehensively with employing a certain conceptual design. At the same time, this experience offers intimacy and shows its ideographic structure. Within the framework of sociological theory, we can call such a technique an intra-case generalization (Salvatore 2014). As a philosophical discourse, our reflections on the essence of alcoholic experience fit into the tradition of *Daseinsanalyse* (May 1958;

1983) and, in many respects, follow the approaches of existential psychoanalysis (Ludwig Binswanger's article *Der Fall Ellen West* (1944) is a distinguished example). This strategy is also close to the methods of the existential-phenomenological psychiatry invented by Ronald David Laing. His book *The Divided Self* (1969) should be mentioned here. Such a sort of conceptualizations uses certain theories and hypotheses (in our case, the constructions of neuroscience and neurophilosophy) not because they are exact and well-established but because they are apodictic to the described experience. Correspondingly, these schemes are considered as true not because we can deduct experience from them, but because experience itself shows some schemes as a foundation for its existence.

The first two chapters discuss the advances and limitations of the two recognized models of addiction: the brain disease paradigm and the rational choice theory. At the end of the second chapter, we propose a model of a pure rational choice for the manifestations of addiction behavior and try to define alcohol self-poisoning as a consistent philosophical position. The next chapter follows with an examination of why alcoholics deliberately infuse the body with chemicals and specify what and how an involved person tries to regulate. Here we introduce Georg Northoff's (2004) dichotomy of the first and third person and hypothesize addictive behavior as a disorder of competence. Chapter 4 gives some extrapolations of innovative neuroscience theories of addiction in the psychological and philosophical descriptions of the alcoholic mind and acting. Particularly the anhedonia hypothesis and the dual (want-like)

structure of reward center are considered. In the following chapter, we outline the fundamentals of the pathological process of hijacking the basic neurotransmitter mechanisms of the nervous system that replace natural challenges with its own specific hints to promote addictive behavior. In the next chapter, we present an idea about the similarities between gambling and alcoholism to compare their ideations and actions. The article ends with a discussion of future challenges and recovering strategies that can be projected from our philosophical models of the alcohol addiction process.

1. Brain Disease Paradigm

Anyone who steps into the studies of the problems of alcohol addiction is met very quickly with a phrase like "addiction is a disease." Current addiction scholarship (Angres, Bettinardi-Angres 2008; Courtwright 2010; Hammer et al. 2013; Leshner 1997; 2001) traces the development of this paradigm from the official position of the National Institute on Drug Abuse (NIDA). Particularly, David Courtwright has noticed the following:

The key elements of the NIDA brain disease paradigm can be simply stated. They are that addiction is a chronic, relapsing brain disease with a social context, a genetic (or, more precisely, a gene-environment-stress-interactive) component, and significant comorbidity with other mental and physical disorders. Although drug use often begins voluntarily and develops over time, users lose control with the onset of addiction. (Courtwright 2010; 137)

This model of addiction, which we would describe as a natural science approach, grows from earlier attempts to conceptualize alcoholic

behavior implied in the medical frame (White 1998). Elvin Morton Jellinek's disease concept of alcoholism (Jellinek 1960) is considered as a key milestone of detecting alcoholism as a developed disease. However, the disease concept of addiction is harshly criticized by many psychologists and sociologists (Acker 2002; 2010; Alexander 2008) 'as reductively inattentive to individual values and social context' (Courtwright 2010; 144).

The sharp rebuke that would be offered to the disease paradigm is following. There are no miraculous pills to treat alcohol addiction. Those that are used nowadays – there are three types – *Disulfiram*, *Naltrexone*, *Acamprosate* (Ries et al. 2014; Ruiz, Strain and Lowinson 2011) – are just auxiliary. Even when taking addiction as an illness, this illness is treated by the words of a psychologist, a counselor, a philosopher (Hansen 2014; Knapp, Tjeltveit 2005; Walsh 2005) or a priest (Greene, Nguyen 2012; Morgen et al. 2010; Robinson et al. 2011). The last place is not encountered with magic in the fight against an addiction. Sometimes for professional severity, this cure takes the form of placebo (Mendelevich 2011; Raikhel 2010) or coding therapy (a treatment developed by Alexander Dovzhenko) (Fleming, Meyroyan and Klimova 1994; Zebrin 2015), which still hasn't lost popularity in the territory of the former Soviet Union.

The next principal thesis is advanced with the neurobiological theory of addiction and says that the main target of addictive behavior is the reward system. For example, the *Diagnostic and Statistical Manual of Mental Disorders: DSM-5* (2013) notes that

all drugs that are taken in excess have in common direct activation of the brain reward system, which is involved in the reinforcement of behaviors and the production of memories. They produce such an intense activation of the reward system that normal activities may be neglected. Instead of achieving reward system activation through adaptive behaviors, drugs of abuse directly activate the reward pathways. The pharmacological mechanisms by which each class of drugs produces reward are different, but the drugs typically activate the system and produce feelings of pleasure, often referred to as a 'high'. (American Psychiatric Association 2013; 481)

The reward system is described neurobiologically with references to the chemical and physiological processes occurring in the brain (Koob, Arends and Le Moal 2014; Koob, Kreek 2007). Dopamine (Berridge, Robinson 2003), serotonin (Higgins, Fletcher 2003) and other neurotransmitters that are referred to the biochemical analysis of the reward system do not associate with fanfares, prizes and other means of human reward. Everybody feels pleasure often, but our knowledge of this feeling (as of all others) is extremely limited.

It is accepted that the human brain consists of two types of structures (Hofman 2014). There are new ones and old ones. The new structures are the direct consequence of the evolution of the *Homo sapiens*. The old segments of the human brain were inherited from the progression of our biological predecessors like apes, reptiles or, for example, fishes. Surprisingly, the brain structure responsible for reward inhabits the old areas of the brain and so is not strictly human. It is quite a tricky issue: all the higher nervous activity, social achievements and losses of humans can be traced back to the

processes in the depths of the brain. The areas of the brain that govern our biological reward system have appeared long before we (as a species) had begun to exist. We can metaphorically describe the reward system as a trace of God in the human mind.

Just imagine how extended is the chain of interconnections from the external social activities through the thinking processes and the bitterness of doubts and disappointments to a simple chemical reaction that tells us, "Job's well done! Go ahead and have some rest!" The addictive intake of alcohol and other narcotic drugs forms a simple snippet of code that circumvents the physiological paths of the tricky reward system into discerning behavioral patterns to achieve some useful aims. There is the essence of the concept of hedonic homeostatic dysregulation (Koob 2008; 2013a; 2013b): in this context, we should separate alcohol dependence from addiction (Maddux, Desmon 2000). Conceptually, the definition of alcohol abuse through the concept of *addiction* indicates the traditional American approach leading to the exclusion of the definition of alcohol dependence from the DSM-5 system (Ries et al. 2014). The arguments of such a position (O'Brien 2011; O'Brien, Volkow and Li 2006) are clear to me. If someone states the condition of alcohol abuse as dependence, we ask a fundamental question – *dependence upon what?* Let us lay the most popular of the opinions. A diabetic patient takes insulin to survive. A cancer patient takes painkillers including narcotics. The patients depend on the drugs but they have no addiction to them. The patients take drugs in the prescribed amounts. And they

do not want to manipulate them to influence the reward system. On the other hand, let us presume an addict is prevented from getting alcohol – he or she will not die, neither will his or her health suffer much. This means that an alcoholic depends not on the ethanol but on his or her desire to take it. Only 20 percent of those who drink alcohol are liable to the addiction (Heyman 2010; Vaillant 1995).

Those whom we call addicts, who choose to be charmed by alcohol and seek the short path to the reward system can be divided to at least two big groups. The goal of the first group is to get "high." Under some conditions, researchers recognize another reason that governs the second group. It is the self-medication hypothesis. Its originator is Edward Khantzian (1985). In the case of alcohol use (Khantzian 1997), an addict suffering from real or imagined mental problems (anxiety, helplessness, loneliness etc.) may take this substance as a tranquilizer (Crum et al. 2013; Hall, Queener 2007; Mariani, Khantzian and Levin 2014) or as a miraculous remedy for an effective removal of emotional and social burdens (Shinebourne, Smith 2009).

To what extent is the choice to drink or not to drink in a human's power? This is the next key question for scholars that study alcohol addiction. The advocates of viewing alcoholism as a disease take craving (Koob 2013a; Sinha 2013) as its basic category. In other words, there is an irresistible power inside an addict that makes him or her drink despite his or her personal wish (Tiffany, Conklin 2000). The best expression of such reasoning is reflected in the first creed of Alcoholics Anonymous: "We admitted we

were powerless over alcohol – that our lives had become unmanageable.” However, there are strong arguments for treating alcohol abuse as conscious alcohol self-poisoning (Becker, Murphy 1988), while the narratives of some irresistible force can be considered as modest attempts to justify the actions with negative consequences that are condemned by others.

2. Rational Choice Model

Any change in behavior can be described as a choice. Out of many alternatives, a human always chooses one. Let us assume we are invited to a reception with an all-you-can-eat buffet. If we are hungry, we have two alternatives: to stop at the first table we can find and satisfy our hunger or to try everything by rationally programing our consumption behavior that would let us reach full satisfaction throughout the reception. We have just described the basics of the melioration theory, the applicability of which to the addiction process was noted due to an influential book, *Addiction: A Disorder of Choice*, written by Gene M. Heyman (2010).

If we continue with the example of the reception, we may add some unexpected details. Such meetings are not nosh-up events but social interactions. They are meant not only to bypass social obstacles but to solve one's business problems and find new partners as well. In other words, the parallel objectives (satisfaction and the trying of all foods in our case) can be replaced, to a simultaneous extent, with another pair of choice directions. There are the complex, long-term aims for participating in the reception (business interests or scientific career opportunities, for example) as well as the

short-term one (to satisfy one's appetite). In most cases, the long-term objectives win. Let us add one more condition to the same reception model. They often serve wine and strong liquors in such events. A non-addict willing to drink and having come to the reception for business matters will do his or her best or at least save his/her face and will, in eating and drinking, observe the norms of the event. But let's return to addictology.

Heyman's book is based on the examples of fighting with smoking, which is the simplest and safest addiction. Sometimes, nicotine is called a “useless drug” and smoking is considered as a “bad habit” of poisonous smoke inhalation. In this case, according to Heyman, someone who feels some concern for maintaining his/her health (long term goal of healthcare) should make the right choice of a sensible lifestyle. If this approach may work with quitting smoking with varying degrees of success (we can recall the tendency to make scary pictures and inscriptions on cigarette boxes bigger and the cigarette ads smaller), things are more complicated with alcohol addiction. An alcoholic gets drunk at the least suitable moment, even before an important event that may drastically change his or her life. It often happens that he or she disdains the social norms of the abovementioned reception and gets seduced by the unlimited amount of free and accessible alcohol. That is the cause or the effect of impaired control (Fillmore 2003; Twerski 1997). This phenomenon can be hardly explained as a rational behavior. Nevertheless, the combination of a long-term goal and a short-term one in the course of alcohol addiction goes beyond the rational choice theory. We

will return to this problem with some different approaches in chapters 4 and 5.

Alcoholism is not a dark face of only the outer fringes of society. The history of literature and cinema shows the dramatic illustrations of the introspection of experiences of alcohol addiction (Djos 2010). I personally favor Eugene O'Neill's *Long Day's Journey into Night*. It is widely believed that addiction affects different social strata evenly (Ries et al. 2014; Sarvet, Hasin 2016; Schuckit, Smith and Landi 2000; Vaillant 1995). It does not spare business people, doctors (Ameisen 2009) and other well-paid, high-functioning, wealthy and privileged members of the society (Schuckit et al. 2000). The characteristic features of the alcohol careers of different social groups are widely discussed (Gruenewald, Remer and LaScala 2014; Hoggatt et al. 2015; Holm-Hadulla, Bertolino 2014; Iszaj, Griffiths and Demetrovics 2016; Knafo 2008; Lowe, Ayres and Bowen 2015).

Alcohol addiction has a long-lasting course and often comes to a climax when a person is a very advanced in his/her career. It means that a person holds a prominent position in society, receives a good salary, favors his/her job – those things that are weighty not only at the rational level but that also offer strong incentives for the same reward system he/she stimulates with alcohol at the same time. The more complex the social functions of a person are, the worse the problems for them are endangered by a continuation of the alcoholic career. For example, addiction dramatically ruins research or creativity plans and it destroys families. The situation may be even worse if alcohol is taken by some writers or artists as a doping, another source of

inspiration. Liquor as a working tool begins to interfere with creativity – in support of which it was used – although in an illusory and mistaken way. When facing the contradiction, all people begin to understand alcohol use as a problem, not as a desired goal. Seeing the problem in such way, they fight against it with or without success. As a rule, an individual tries to find a workable alternative to the addiction in his or her own experience. However, for someone, the wish to find a global force or a new choice model that may help him or her to overcome a galloping addictive desire bumps into an unexpected obstacle. There is no alternative at all.

2.1. Only Independent Wanting

Choice does not manifest itself as a purely situational thing, but it can be considered as a moral or philosophical phenomenon. It is the strongest manifestation of free will. As an introduction for this part of the contemplations, I want to quote a passage from Feodor Dostoevsky's *Notes from the Underground*:

And where did all these sages get the idea that man needs some normal, some virtuous wanting? What made them necessarily imagine that what man needs is necessarily a reasonably profitable wanting? Man needs only independent wanting, whatever this independence may cost and wherever it may lead. Well, and this wanting, the devil knows <...>. (Dostoyevsky 2004; 24)

As we will show further, wanting, as well as liking (both psychologically and biologically), are forerunners of any choice. We cannot call the desire to intoxicate oneself a virtuous one. From the viewpoint of common sense, it is doubtful to estimate it as beneficial. But these

arguments of the external estimation do not abolish the desire. What can we set against it? Philosophically, such traditional things like persuasion by word or by example come to mind. In matter of fact, these means follow the marketing strategy principles. For example, showing the real advantages of healthy lifestyle reminds an addict about the harm they cause to the people around them etc. But then, as a rule, one should be ready to be responsible. Similarly, this I've encountered in the same *Notes from the Underground*:

I want peace. I'd sell the whole world for a kopeck this minute, just not to be bothered. Shall the world go to hell, or shall I not have my tea? I say let the world go to hell, but I should always have my tea. (ibid; 106)

We speak about vodka, not tea, but the sense is the same.

This comparison might seem strange from the point of view of the traditional addiction discourse. However, let us recall we are now in the rational choice theory framework, which does not consider such conditions as compulsivity (Nakken 1996) or the weak will of a human. It surely makes our schemes more abstract, but in return, it makes us sure what such a choice may be. Dostoyevsky's protagonist, quoted above, is rather an abstract model in our discourse about addiction. Alcoholism as a conscious and will-controlled phenomenon is a rare condition. It is self-deception, but this self-deception is a choice. In spite of that, stories about drinking suggest a clear analogy. We mean John O'Brien's *Leaving Las Vegas* (1995). The novel itself shows two types of addicts: Ben is willing to go his woeful way

to the end, while Sarah is trying to break with these vicious bonds.

The main character of *Notes from the Underground* is an example of the phenomenon of an insignificant individual in Russian intellectual tradition. The society has forced this individual to unbearable conditions. However, instead of trying to rise up and accept the rules of a societal game, the individual shows a deep disrespect to all social structures. Stepping aside from our starting position of addiction philosophy, we can say that a similar comprehension of the self in society inspired, for example, the Russian revolution, European anarchism and cases of extremism like the Red Brigades in Italy. Getting drunk just for spite, killing oneself with alcohol may be also this sort of life philosophy. Let us call this type of persons as convinced addicts.

Even when resorting to the sophisticated methods of psychoanalysis, we will never learn if this philosophy is really an *idée fixe* or just a sheltering for someone's helplessness and impossibility to cope with life's hardships (Wang, Zhang and Zhang 2017). We are out to win this game, so never stop till the last gun is fired. Such a narrative is not only about alcohol use but about destroying social foundations, like the Russian Bolsheviks did. Nevertheless, every action does not bring satisfaction to convicted addicts anyway, and any admonition to bow to the reality stumbles upon the wall of misunderstanding. However, having descended from the heaven of philosophy, we face even one more problem. One may think it is an exaggeration to believe that the social world is evil, but there is little evidence of paradise on the Earth.

Considering debauchery as a voluntary act, we imperceptibly fall into the hypothesis of rational addiction, which ignores the social foundations of alcoholism or even the clear preference of acquiring euphoria in the quickest way (that's how alcohol and other drugs affect the reward system (Koob 2013b)) to other life strategies viewed by the public as more wholesome, useful and rational. An instant and easy, adjustable pleasure really has great chances for becoming the *idée fixe* and the main driving force of behavior. There is nothing wrong with feeling great satisfaction with a completed study or the successful accomplishment of a mission or the recognition of one's literary achievements etc. But the case with chemical addiction is different. A person can wear old and dirty clothes, eat poorly, be ostracized by everyone and remain a happy individual at the same time, although with chemical support. What can we offer to this person instead? A little, at best.

3. Cure for Life

It is easy to fall into the trap of the general remark that any inquiry into potential addiction problems is a multidisciplinary task. When you tackle such a multifactor issue according to the habitual interests of one sphere of knowledge, you deal with the difficulty of seeing beyond the habitual framework. The addiction, namely such a chemical type of addiction like alcoholism, adds an extra temptation. Freud's psychoanalysis made a remarkable gift to clinical psychology among its other revolutionary innovations. It is due to this great Austrian scholar that such phenomena as depression and anxiety disorders began to be treated as problems of the

mind (Freud 1926). Recently, we may see other examples of the same approach in considering depression and anxiety disorders as cognitive disturbances (cf. Aron Beck's cognitive model of depression (1964; 2014)) belonging mostly to the cognitive sphere (Gotlib, Hammen 2010; Gotlib, Joormann 2010; Graham 2010). It suggests that relief from these sufferings is achieved by affecting the mind and behavior (Person, Cooper and Gabbard 2005).

Things are more difficult when it comes to a chemical addiction. Alcoholics deliberately affect the body and brain (it's biological or substantial structures) with chemicals. It means that addiction, as a phenomenon, is both inside and outside of the human self. Therefore, one of the first tasks in search for a suitable explanation of any chemical addiction is to understand why, what and how an involved person tries to regulate. Communication of the Self with body, mind and the outside world is barely a rational action. First, each individual act of alcohol consumption causes an irregular set of reactions (not well understood or described). Second, the phenomenon of alcohol impact on the human body can be compared with a picture of a barrel of honey mixed with razor blades. In other words, a bunch of odd and even unpleasant sensations go with the relaxation or euphoric effect opposite to the expected ones (Koob, Le Moal 2008).

If we say that someone is trying to do something intentionally, we should assume they have a certain plan of actions. He or she acts not only consciously but purposefully as well. That is not the case with addictive behavior. An alcoholic does not behave like a disciplined

patient taking the pill according to the prescription in proper intervals to recover from a disease and is not under any doctor's supervision. The compulsive drinking that interferes with social or work functioning serves as a diagnostic indicator of alcohol addiction (e.g., *Obsessive Compulsive Drinking Scale* (Adams et al. 2016; Feit et al. 2015)). However, the confinement of these actions to clean compulsion or incomprehension will also be a strong simplification. If someone understands anything during the abuse of alcohol, why is there a *choice for alcohol*, then?

Here we simply highlight the typical situation of people trying to recover with the help of alcohol. First, it is a lack of pleasure; second, pain and fear, anxiety, then sleep; third, cognitive processes, such as the speed of thought; fourth, the choice of the social role someone wants to take. The list is not comprehensive, but it is complete enough to describe alcohol as a medication. Inside this scheme, alcohol can be a mean of euphoria or anxiolytic, a relaxation drug or a superego solvent that 'dissolves inhibitions and releases violent and other suppressed behaviours' (Gelles 2016; 9; cf. Khantzian 1997; 2015b).

3.1. Disorder of Competence

Here we need to go further in our discussions on the brain-mind-body-environment complex. Therefore, we are going to add another scheme originating from neurophilosophy: the dichotomy of the first and third person, suggested by Georg Northoff (2004). First, Northoff speaks of the structures he called *neuronal states*; second, he considers *the mental states*. Neuro-

nal states, which are related to biology, can be studied empirically and belong to sciences. It means we can speak of them (1) in the third person or (2) as inanimate objects. For instance, we can disturb the neurotransmitters in diverse ways to regulate sleep, mood and appetite by trying various medications. Mental states are the neurobiological results of brain functioning. Brain death means the termination of every process of the human body, including mental and spiritual ones. It means that we can grasp the mental-brain relationship only if we turn off certain brain structures or slow them down to such a degree that we can reach, for instance, a coma or stupor.

During routine practice, the relationship between the mind and those biological processes that take place in the human brain is not clear. This vagueness is obviously ontological or existing permanently with no dependence on the human civilization development level. Every moment of our experience is ideographic. Its appearance is made by a clash of three big and multidimensional systems at least. These are results of the biological functions of the brain, of our mental activity and of the world around us. We react to the environment and it stimulates our activity. Intellectual activity is not stochastic; it is an anti-entropy process, but that is all we can say about its essence within the brain-mind-body-environment paradigm. However, this is only a part of the problem.

We can speak of our brain in third-person perspective and speak of ourselves in first-person perspective. The borders of this first person are hidden somewhere far on the routes approaching the brain's biological structures. Let us recall

Freud's *das Es* or *the id*, the category he used to characterize the unconscious. The inborn curiosity of humans considers any obstacle to the broadening of outlook as an annoying mistake. Meanwhile, what we call the barrier between our ego and the inanimate prospects of the brain can be viewed not only as an atavism, but also as a natural gift of the evolution, something embedded in the nature of our functioning as *Homo sapiens*. From this point of view, our ego, the world we view in the first-person perspective, has inevitably no means at all to include to itself the neurobiological realm.

It is the part of us as the material substructure of the Self and still is not in terms of cognitive psychology or phenomenology. Thus, the striking picture of addictive behavior begins to emerge. Let us suppose that the Self tries to control the neurobiological reward system from the first-person perspective, although these deals are beyond one's competence *a priori*. The disease concept of alcoholism surprisingly plays up these addict's demands with trying to switch off the receptors that are probably affected by alcohol. An example of such a method to reduce the desire of humans to solve alcohol problems is naltrexone (Helstrom et al. 2016; Krystal et al. 2001), an opioid receptor antagonist. In 1984, naltrexone was approved by United States Department of Health and Human Services to treat opioid addiction and in 1994, it was approved to treat alcoholism. Responses from this treatment are equivocal. As *The ASAM Principles of Addiction Medicine* states, 'some efficacy is observed clinically, but the effects of naltrexone are relatively small in magnitude and effective for a subset of patients only' (Ries et al. 2014; 123).

4. How "Being High" Substitutes for "Being Happy" in Addictive Thinking

4.1. Anhedonia Hypothesis

Pleasure, as well as fear and worry, are natural states. They are normal reactions to the environment and we need them physiologically. The absence of these senses stops our functioning as biological and social living beings. Quite the contrary – a persistent lack of support from the reward center makes us unhappy. Anxiety prevents us from doing what we need or want. That is why the psychological analysis of the emotional sphere is sometimes developed with two closely-related categories: reward sensitivity (He et al. 2017; Loxton, Tipman 2017; Lyvers et al. 2017) and a diathesis for stress-related problems (Chang et al. 2016; Lazarus 1993). 'Reward sensitivity is a biologically-based, normally-distributed, predisposition to seek out rewarding substances and to experience enjoyment in situations with high reward potential' (Loxton, Tipman 2017; 32). The diathesis can be hereby understood as a specific emotional allergy to a certain life situation (Belsky, Pluess 2009; Chang et al. 2016; Monroe, Simons 1991). We all pass through certain similar groups of events, but our reactions to them may be different. Someone can endure even an obvious insult or offence, but then pause and give a rational, beneficial response. Others are prostrated even from the thought that their action may trigger a reprimand from people around them or a reaction they do not want. In the context of an alcoholic personality, binge drinking can sometimes be rationalized as a form of self-care grief. The next phenomenon

we will try to interpret in the similar frameworks is anhedonia (Ritsner 2014; Wise 2008) or an inability to enjoy life. Some arguing theories (Di Chiara, Bassareo 2007; Kelley, Berridge 2002) consider the broken relation of an individual with his or her reward centers as an addictive trigger mechanism (Wise 2008).

*Werd' ich zum Augenblicke sagen:
Verweile doch! du bist so schön!*

(If to the moment I shall ever say:
'Ah, linger on, thou art so fair!').

These words from Goethe's famous *Faust* (possibly not fully in line with the general idea of the poem) may be an excellent basis for our further argument. Natural joys of life are usually instantaneous and cannot be encored. One shall seek a new set of circumstances for every new feeling of joy. From this conceptual framework, Faust's wish to linger the moment was really a threshold of death. Else such intention may be on the verge of addiction. We may say the condition when any new situation has its new pleasure is normal. However, when a person does not want to go further and strives to feel again the euphoria by one learned method, it brings a range of psychological problems, not only addiction-related ones. What is the essence of what we call pleasure, then? To make the story simpler, we will follow the behaviorists' example and define pleasure as an emotion, even if, philosophically, it would be a great simplification of the matter. Pleasure and joy are emotions that unite the reaction to the beauty of the nature, the fineness of literature and such banal things as delicious food at a party. Respecting the mentioned affects as an

emotion, we can only feel it. A trifle yet popular example: we all know what sweet taste is, but we lack the words to describe it to others. Things are more difficult with pleasure. A person constantly gets what he or she understands as elements of pleasure, joy and euphoria. Most of us have some aesthetic sensitivity and relevant intussusception of beauty. Verbally, all these words, although not synonyms, are in the same area of the mind that we can conditionally call positive emotions. Unlike thoughts or strict and logically verified sentences of any scientific text, emotions have a more complex structure. First, there is the chemical part. Second, there is the very rational beginning that can be conditionally associated with the release of dopamine or other pleasure-related neurotransmitters. Third, there is a specific cognitive decoder between two incompatible attributes of the spiritual (the domain of thoughts) and chemical (neurotransmitter systems functioning).

Let us recall the science fiction movie *The Matrix* (1999) by the Wachowskis that acts as a very successful visualization and popularization of this kind of theory of mind. The main hypothesis (if one can describe a sci-fi movie in such terms) is that our reality – the objective things around us and our internal world – can be translated to program codes and electric pulses. I might say something doubtful, but it seems so. In fact, both pleasure and disgust are not just reactions to signals from the world around us but also to the physiological and even chemical processes as such. The complex mechanism of dopamine release in the human brain is a natural process with physical, chemical and biological characteristics. However, no hu-

man approaches work in it. In other words, the sugar is not sweet. This characteristic cannot be applied to the reaction of our body to eating of sugar or to the combination of neurotransmitters making us find it sweet (Pecina, Berridge 2005). It is purely subjective estimation. However, we can go even further. The tastes can be divided into pleasant or geek. This division is a prompt to the body on what to do with food (Harington et al., 2016; Pandurangan, Hwang 2015). From this viewpoint, our actions can be estimated as beneficial, harmful and useless. The first ones should be kept, the second ones should be avoided, and the third ones ought to be used to help the first ones with maximum efficiency. Thus, we get back to the reward system description. A person that believes in his or her unhappiness may simply think so. But we may say he or she lacks the internal potencies to stimulate the reward system properly (Volkow, Wise 2005).

Anhedonia (Wise 2008), in its original statement, was understood as a defect of mesolimbic dopamine neurotransmission. Nevertheless, neurobiologists were cautious enough to go further and declare that a human cannot be happy for he or she has a brain that lacks dopamine. First, other neurotransmitters may be related to mood-elevating effects. Perhaps serotonin, norepinephrine, glutamate, GABA, endocannabinoids and endogenous opioids (Liggins et al. 2012) are involved. Second, it is not a scientific issue to speak of the human emotions in relation to neurobiology. Biochemistry is about very strict natural processes. Dopamine has the same relation to sense of beauty as the epithets “strange,” “charming,” “beautiful” etc.

that are applied by modern physics to the quarks description. It might sound odd to say this, but the biochemical processes inside a humanoid’s brain have nothing human. Moreover, such reward centers exist in the brain of our biological ancestors that (I dare suppose) do not know what pleasure is, even though they experience it. And third, before writing this, I browsed my memory to find any stable pattern of the pleasant and predictably failed. All these emotions related to a good mood are similar, but not the same. It means that every burst of joy is caused by a unique set of outward factors and their response is merged with the erratic mixtures of different neurotransmitters, prepared by our brain for every individual situation.

4.2. Want-Like System

The experiments for proving a direct relation between the level of dopamine and good mood came with uncertain results. L-dopa (a dopamine stimulant and precursor) did not significantly affect the mood of the volunteers that agreed to take it (Melis et al. 2005; Wise 2008). Haloperidol (a suppressor of dopamine receptors) rather decelerates the whole human mind than affects mood anyhow (Liggins et al. 2012). However, these studies have become a definite impetus in understanding the essence of what the human reward system is. We are going to tell the key aspects of the want-like hypothesis as elaborated by Kent C. Berridge and Terry E. Robinson (1998; 2014). It should first be noted that according to the mentioned theory, mesolimbic dopamine neurotransmission is not a one-side reaction but a kind of management of at least two functions of the

brain that these researchers called “liking” and “wanting” (very similar to those “strange” and “beautiful” quarks). In other words, the dopamine receptors become active not only at the moment we reach a desired goal, but earlier, too, when we go hunting for a desired present like our wild ancestors (Montague et al. 1996). The work of the dopamine system may be described as the preprocessor of our mind activity. The want-like system does not only stimulate us to do an action, but also, by altering the dopamine release (the so-called tone signal), it marks those mistakes that we make on certain stages of our way to the goal. Where and in what form the information is stored about the points, where our neurotransmitters cause us to move, how our mistakes and achievements are marked biochemically – we can only guess. It is even more interesting to know if this preprocessor is reprogrammed according to our human existence or if it holds the ancient codes of the evolutionary experience of our ancestors. In any case, no answer to these questions is given by the researches we are discussing.

According to Berridge and Robinson (Berridge, Robinson 2006; 2016; Berridge, Robinson and Aldridge 2009), the binary system by which the dopamine structure controls the human body is associated with the dualistic model of the reward center. These findings show that reward and reinforcement can be imagined as the cognitive add-on part of the mentioned couple of biochemical liking and wanting. However, the existing literature on the functionality of the reward center is, first of all, still argued about and, second, does not

answer the main question regarding the place of this chemical structure of the human behavior regulation in the whole control system used by the human mind. In other words, we can only guess if the dopamine reward is the deepest point that estimates our certain action as successful or not. The same doubts we can express about the reinforcement role. The experiment results we reviewed were related to the behavior analysis of different mammal species (Lynch et al. 2010; Olmstead 2011; Shippenberg, Koob 2002); therefore, their extrapolation to humans should be made with limitations.

For apes (Montague, Dayan and Sejnowski 1996), changes in the dopamine system become a signal of the appearance of a useful aim in two different contexts. On the one hand, it acts as the prognosis of the right goal. On the other hand, it is the right achievement of the goal by training. Moreover, dopamine neurons react to new events, such as offerings of water and food. In this way, the neurotransmitter system performs its mentioned correction function. Additionally, Peter V. Kalivas and Nora D. Volkow (2005) discuss the correction function of dopamine neurotransmission in the form of an isolated response to a discrete (limited by time and space) event. They concluded that once an element of the experience becomes habitual and easily understood, the dopamine system reaction to it ceases to exist. Summarizing, we may say that the function of dopamine in the ventral tegmental area can be described as follows: (1) to warn the body about the appearance of new important stimuli, (2) to contribute to neuroplasticity and (3) to signal the body of the advent of a new situa-

tion, preparing it motivationally to accept an upcoming challenge.

5. Hijacking the Brain

It is still unclear how alcohol affects the work of the dopamine system. Steven Hyman (2005) supposed that alcohol triggers a pathological usurpation of the dopamine mechanisms of the nervous system, replacing the natural challenges of the external world with its own specific hints to which it leads an addict. On the other hand, understanding the effects of alcohol on the dopamine function of the whole reward system is not limited to the fact that the chemical reaction of alcohol is stronger than the response to natural stimuli. At the same time, according to S. Hyman, alcohol breaks the binary structure of the reward system functioning when a strong phase signal of enormous amounts of alcohol with no information load breaks the whole fine structure of the system of biochemical training of humans and animals. If we leave this purely neurophysiological scheme and go to the level of psychology, we would face new questions.

It should be ascertained that the reward center in the entire system of the human mind no longer seems to be simple. Moreover, it can be called an uncertainty raised to the fourth power. First, we are sure that the available knowledge about this part of the processes in the brain is very limited. Despite the improvement of tools and more sophisticated measurements, most conclusions in neurosciences are made because of indirect data, such as animal models (Lynch et al. 2010). Second, the reward system is not a

rational structure and is therefore certainly uncontrollable by human logic. We tried to give it a digital character, and we can even describe the reward system as a set of algorithms. However, these algorithms are not a product of human consciousness and the rule of its construction is not known. Third, since we say that neurobiological reward is the basis of the emotional system, then every situation of reinforcement is different – not to say unique. It is impossible to build up an ideal system where every step will bring only positive emotions. And fourth, the reward structure we talk about is not entirely human. Remember its characteristics as an old structure of a humanoid brain that we got from animals and other biological ancestors. In this respect, its functioning is implicit for the whole humanoid mind structure and is in some contradiction with the nature of human activity at same time.

Let us imagine what the reward system can be as a function of animal behavior that is not burdened by social meanings and customs. It will not be too bold and suppose that animal ability to plan does exist but at a very rudimentary level (Bekoff et al. 2002; Lurz 2011). Thus, if we could talk to a bat (a kind of resorting to Thomas Nagel's parallel (1974)), we would fail in persuading it to do something to get a reward in, say, a year. My research of intellectual history reveals that humanity, at its social level of evolution, not the biological one, had a long journey of the enlargement of our time intervals. The continued development taught us to plan for years to come and not just to live this day. Of course, only the bat can give the best answer to how harmonic its reward system function is in

respect to its activities (for instance, predicting hunting targets or choosing the right mating partner). And, what is also important, how precisely probable behavior errors are corrected. These questions are not just rhetorical. By now, experiments with animals (mice, rats, sometimes monkeys) is nearly the only way to study the biological and physiological foundations of the reward system. Moreover, the so-called animal model (Lynch et al. 2010; Olmstead 2011; Shippenberg, Koob 2002) is a standard for medical addictology. The data obtained and based on this model is directly extrapolated to the processes of the human brain.

Is it proper to consider the results of the study of animals applicable to human? The answer to it is just supposed. A postponed reward is a typically human phenomenon. The contemplation about the sense of existence is just the most abstracted example. Most of us are disposed to success, but, in this case, the very dopamine can merely stimulate our rational system of planning, which may fail to give results due to the extreme complexity of social actions. On the other hand, the sphere that handles short answers seems to be mostly automated and, therefore, does not act as a good target for the reward system.

More obvious (though also hard to describe) is the pathological picture of alcohol's impact on the neurotransmitters. We know that a constant consumption of alcohol in enormous amounts creates a disorder not just in everyday life but also in the entire system of the social existence of humans. The most direct behavior cues resulting from hijacking the dopamine system is the burst effect. A neurobiological storm of the chemical

system of the brain makes its functioning more stochastic.

5.1. Mutilated Interoception

Our feelings that trigger addictive behavior are rested on the extremely actual situations as well as on sets of body events. In other words, for instance, we feel withdrawal symptoms and anxiety, which make us to commit certain actions, at the same level as we sense pain, sickness, and other somatic reactions. Besides, when interacting with our body signals, we do the same things as a qualified doctor. Let us imagine that one has a headache. What would one do? Bear the pain? Take a painkiller or just stop working and take some rest? Moreover, such analytical activity is often done automatically with four patterns: (1) habitualness; (2) simplicity; (3) the smallest time spent; (4) the lowest load of the central processing unit and the operative memory, if we resort to colloquial IT speech. Let us assume now that an alcoholic's behavior becomes a part of life, which means that not just an individual's ego exercises this behavior, but also the part of the mind accountable for automatic responses.

In the case of high-functioning alcoholics we may, for instance, see a bottle of liquor that is put between the keyboard and the monitor, and the person just drinks from it occasionally during arduous work with no thought put to it. In a similar case of smoking, some folk medicine advice is given as a palliative measure to hide the pack of cigarettes away. This makes a smoker look for cigarettes only when the lack of nicotine reaches the level making him or her stop his/her main activity that is the smoker's executive

power. In other words, it is a manipulation of a controversy between an unnecessary automatism and the main activity for the time being that may act as an inhibitor. There can be more complex models of false interoception related to an addictive behavior (Paulus et al. 2009; Verdejo-Garcia et al. 2012). Let us use the same an example of a headache to illustrate them.

The choice to take a pill or to go for a walk, evident from mere usefulness and efficiency, is not as evident in reality. A healthier method of headache removal may be chosen and even tried once or several times. But it does not mean that this method becomes routine. Moreover, the change of the response to a body signal often requires a radical revision of what we call a philosophy of life, when the choice of a walk instead of a pill (which perfectly fits the mentioned four-element scheme) is made because a person finds health and good mood more important than work. Meanwhile, walks and visits to the gym take time from work. We can view our reaction to the body signals from another perspective. Most of the alarms that are sent to us by our physical shell are either warnings (thus, not urgent) or phantom in that they are like white noise needing no necessary response. An addiction triggers an even paradoxical situation. Our sensations appeal that we are contradicting the purpose we set for them. In other words, the body asks to harm itself. Using the computer metaphor again, we may say the alcohol addiction is like a computer virus that comes into the human body and makes the body send signals it would have never sent under healthy conditions. Moreover, according Stephen T. Tiffany and Cynthia A.

Conklin's hypothesis (2000), we can speak of the so-called direct links when the body makes an unmasked signal to drink alcohol to the mind to solve a problem – usually a phantom one. Thus, a complete paradox takes place when every demand of the body gets the same response: “you need a drink.”

5.2. Fading Away, Automatism, Senselessness

If we aim at something significant (obviously crossing the borders of the dopamine want-like scheme), self-realization always suggests the overwhelming presence of many obstacles. We would think, in a competitive state, without any additional expectations of a prize waiting for us in the end and would suddenly realize that the reward lies in the process itself. This observation can be used to describe the human's mission as such as well as the main challenges in their minds. However, if this sacred purpose of a human being is taken out of our consideration, we do not find an alternative to addiction. Of course, it is difficult to imagine all of us performing our duties non-stop. All work and no play makes Jack a dull boy. On the other hand, relaxation is work too, in respect to the kingdom of automated responses. We can speak about the craft of earning money and the art of spending it. Let us imagine rest as a goal. It is not possible without planning which (for example, in the case of travel) is not limited to the choice of the route and the hotel. First, one needs to find a difficult solution: to realize what he/she really wants. It means a difficult and a not completely rational dialog with the person's own self. For instance, one wants to fly to Australia,

but is afraid the long journey; thus, a substitute to the remote continent is searched. Choosing a restaurant for Sunday lunch, a trip to the gym or a sauna is the same task of the mind, which, in its structure, is different from the usual solution of social problems in only one aspect – it is not oriented to change the world; it is about understanding yourself and serving yourself. In this aspect, one's care to understand himself or herself does not seem easier than self-realization in the world around us. On the other hand, difficulties in self-understanding are among the prerequisites of those negative issues that arise in the field of mental health. The dialog with the world around us and the service for ourselves have different directions, but they are similar in self-reflection structure, primarily by the presence of a distant aim accepted by our *narrative cogito* (Gallagher 2000; Gallagher, Marcel 1999; Lou, Changeux and Rosenstand 2016).

We are emphasizing a key idea of our research: the collocation of our existence with a certain mission (two combined parameters: a plan to cover some time and the value or importance of tasking to the individual) are the most significant opposition to the continuation of an addictive behavior. To justify the idea, we will give an example based on the results of our earlier analysis of the reward center (Yevarouski 2017). In its most abstract form, we may draw the minimal Self (Cermolacce et al. 2007; Lou et al. 2016), when, with no external effect, it lives its own life, not completely comprehensible for others. The most extreme example is given by people born blind and deaf (some analysis of the pathology can be found in Bruce (2007)). The brain that was left with no proper channels

and was not able to collect information from the external world sleeps most of the time. It can be a useful but tragic example for our talk about the aimless functioning of the human mind.

Having notified this conditionally lower point of the brain (and, therefore, cognitive sphere) of inactivity, let us understand the upper limit of the brain's autonomy. We speak of mind-wandering here (Berman et al. 2011) that any of us could have plenty of times. We give a simple illustration of this effect. As an academic person, I should visit boring events sometimes (for instance, a lecture). In a while, you understand you are drifting away from the lecture's topic. Your thoughts get tuned to their own wave. One can speak about this condition in separate ways (Christoff et al. 2016; Konjedi, Maleeh 2017). Usually, the brain is believed to tune to a kind of a background mode, which is mind-wandering (Mason et al. 2007). The exact content of mind-wandering in a certain moment is unclear, but it can be assumed that we may analyze our future tasks or simply look forward to more pleasant events that are set to happen after the boring lecture. Now let us imagine that this aimlessness is permanent: we are not sleeping, but we are doing no other activity. In that case, we receive a certain intermediate state. Therefore, it can be presented as a certain model of the Self that was once loaded with the external environment but now, first, not having certain long-term purposes for an exit in the world, and, second, not receiving an essential reinforcement as well as a reward from the outside, which, in this context, can be possibly called natural. Thus, we can highlight the structure of an addictive mind. The most

obvious result of this scheme is a human attracted by nothing in this world and meditating over the past.

An alcoholic is rarely happy with the world he or she is in living now (Sayette et al. 2009); these meditations, as a rule, become negative and conditional. "Had everything been differently, I'd be so happy now." The psychology science calls it rumination (Berman et al. 2011; Caselli et al. 2010; 2013), the word semantically related to the process of chewing cud (Latin *ruminatus*, "chewed the cud"). Classically, rumination is most frequent with depression (Royuela-Colomer, Calvete 2016). This phenomenon is described as a three-part structure including (1) a kind of an obsession of a negative character, (2) a meditation over the reasons and consequences of this (in most cases imaginary) event and of (3) a remodeling of the past conditionally (Nolen-Hoeksema et al. 2008).

Rumination is often viewed as a kind of mind-wandering (Deng et al. 2014; Mason et al. 2007). Mind-wandering and rumination, as a rule, take place when a person is not stuck to solving a problem. Alcoholics' rumination has some specific features (Caselli et al. 2010; 2013). In the case of depression, this state of mind is a serious obstacle for a person's social activities, but this obstacle is considered as surmounted. Moreover, the entire system of care (psychological and psychiatric) is based on the premise that a client is aware of his or her demanding situation and is trying to overcome it. The case of an alcoholic is different. If the addiction goes far enough, it becomes a consequence of a progressive desocialization, when a

person gradually loses all his/her past conquests: work, family, money savings. Simply put, all the good things remain in the past, and these by-gone times often become the only asylum along with drug intoxication. This sanctuary, where memories give the addict some comfort, is short-lived. The situation may seem even more critical when, for example, a drinking scholar or a businessperson still feels that he/she is fit for the lost position and considers the present tragic situation as a temporary obstacle or the machination of enemies and rivals. No interest to him or her from the society, together with his/her inability to carry out elementary social function, switch his/her brain to a permanent mind-wandering mode, on the one hand. On the other hand, this situation plunges the addict to meditating over the past. An alcoholic tries to find comfort in these thoughts at the same time (to forget about the idiotism of today's existence) and (what is more dangerous) thoroughly looks for enemies around himself or herself that put him or her to these problems (which, like I said, he/she believes to be temporary). In this aspect, the process of wakening from drug-induced sleep that may happen if the addict shall go this long way to complete abstinence is both necessary and dangerous. It is impossible to foretell how a human can meet the new reality.

5.3. The Incentive Salience Hypothesis

The concept of mind-wandering can be enriched with a new discourse of the incentive salience hypothesis (Berridge, Robinson 2016; Robinson 1993; Robinson, Berridge 2008). According to this hypothesis, addiction 'trans-

forms the brain's neural representations of conditioned stimuli, converting an event or stimulus from a neutral "cold" representation (mere information) into an attractive and "wanted" incentive that can "grab attention" (Berridge, Robinson 1998; 313). We emphasize two things in this hypothesis: (1) this type of cognitive activity is outside the rational structures zone and is unlikely to be covered by the activity we called mind-wandering; (2) incentive salience is a part of searching activity aimed (at least with animals) at the direct solution of survival problems. A stellar example of this is a red spot on a white background that – according to this hypothesis – attracts one's attention despite other factors affecting the brain. How can we speak about the situations that are more complex, when a set of such saliences is formed by life experience that makes us choose an aim both significant and easily achievable (Berridge et al. 2009; Berridge, Robinson and Aldridge 2009)? This aim, as a red spot, is always visible and looks like a mouse running away from a hungry fox in white snow, which implies an invitation to catch it. The incentive salience hypothesis was developed as a part of the dopamine model (want-like). In its authentic representation, the hypothesis shall not be used outside the limits of short-term aims and tangible responses. The aim is a real candidate to a reward and can be obviously and tangibly desired.

The original hypothesis explaining addiction as an incentive salience is based purely on the biological foundations of this process. Once again, we are going to render its author's logic (Robinson 1993; Robinson et al. 2014). Since drugs (including alcohol) can enhance the

ability to boost mesolimbic dopamine neurotransmission, their consumption, experienced from specific clues, makes them increasingly tangible during the addiction process. Getting back from these foundations to the process of mind-wandering, we will show how such an incentive salience can fit the philosophical concept of an addict as a person. As it was mentioned before, addictive behavior, in its extreme case, makes the person absolutely relinquish any social life. The sociological discourses about the alcoholics' lives always emphasize the danger of full ostracism (Roman 2015; Roman, Trice 1968; Twerski 1997) that takes place in the late stages of addictive behavior.

Philosophically, we can add a new instance to this description. The weakening of the bonds with the social world leads to the complete atomization of the accentuation of the future. The community loses any attention from such people; thus, signals from the outside are limited to a minimum. In this case, the alcohol impulses of the incentive salience become tangible to the mind, since the signals of the social reality never trouble them. These theoretical presumptions fit certain descriptions of alcoholic consciousness and behavior very well. For, in some cases, the only stimulus to act somehow is the thirst for drink. However, we cannot say this biological part becomes dominant even in the case of severe alcohol addiction. We might assume the hypothesis about biological factors is true if we accept the conclusion that uncontrolled brain structures and external cues can either trigger or support alcoholism. Anyway, we should admit that their implementation inevitably takes on social forms.

6. The Russian Roulette of Alcohol Experience

We can endlessly enhance the details of the picture of how alcohol hijacks the brain, but we will never reach the full knowledge in the analysis of the interaction of spirits with the human body and our mind. The more options and combinations, the more clearly the simplicity turns into complexity and the verifiable things are replaced with hypothetical ones. Ethanol, with its C_2H_5OH formula, is not a very complicated organic compound. Drinking is a simple act, too. But the more elements in our body and brain it touches, the more does the snowball effect of uncertainty spread.

We draw a perfect analogy: nobody can play chess rationally when the chess pieces significantly exceed the usual number of figures. Then, the only thing left is to follow the advice commonly given to a rookie player: when you see that you're losing the game, sweep the chess pieces off the board and propose to your partner to start the game again. However, it is better to compare alcohol addiction to a card shark with five hidden aces rather than to a chess partner.

Alcohol was customarily thought as a "universal solvent" for many problems. However, other traditional drugs, morphine for example, were at some time viewed as means that help to support human mental health. Then, when morphine became a troublesome drug, it was replaced with tranquilizers, which were considered as safe and universal means to recover calmness and sound sleep. It did not last long. The end of these discoveries (White 1998) was the same – either a total ban or strict

prescription frameworks that cannot prevent a drug abuse or addiction developments anyway (Acker 2002; 2010; Levine 1978). Alcohol is an exception among them all. It is in a unique situation of a drug that which, according to neurobiological studies, gets even more dangerous and unpredictable effects (Koob 2013a), has never been outlawed for a really long period of time. It is not right to discuss the reasons for this favorable attitude of the society to alcohol here. However, this exceptional situation gives rich and not only experimental material to study the implications and results of the usage of alcohol as a psychoactive substance. There are many examples of people starting to play a very dangerous and complex game with alcohol along with the attempts to break away from their addiction (often in vain). These examples have not helped us to find the methods that can be used to play this game correctly. To say more, we do not know how to lose the game with dignity and not to try and start a new one.

We will try to compare alcohol and gambling addiction through the abovementioned context. The principle of any casino, lottery or anything alike (if the organizers play fairly) is built on the simple idea that the chance to win is accidental and its probability is very low. Thus, the winner gets the greatest profit. However, there is another factor: the gain of a player repeatedly exceeds the bet. In other words, a person can theoretically predict the prize, but never can do it in practice. Gamers' confidence in their abilities outweighs not only common sense but scientific logic as well. Having lost one game, a gambler begins another one being sure of the better results this time.

Compulsive gambling is the only non-chemical addiction (Potenza 2001; Potenza et al. 2002) included in the latest version of DSM. The internal reasons of the authors of this document for making this choice are unclear to some researchers; the appropriateness of this decision is discussed (Murch, Clark 2016; Trivedi, Teichert 2017). However, some external factors seem to play an important part in the decision. We may mention the tremendous destructiveness of this activity for the whole social life of a human, especially for his or her welfare. Undoubtedly, a person is pushed to gamble by the thirst of becoming rich at once (Schüll 2012). By administering alcohol to our body, we put a goal for ourselves, too. Even if a person just cannot imagine why he/she drinks, the clear answer to this question can be pulled out of him/her by using sophisticated psychological techniques. An adequate explanation of an alcoholic behavior is, of course, important at least to be able to offer a decent alternative to the addict.

Now imagine somebody misapprehending the human body like a gaming machine. Like a chip or a jetton, the individual put some alcohol into it. Getting undesired consequences and hoping to have a better luck in future, we repeat the operation and hope to win, contrary to all reason or common sense. However, we emphasize once again the idea that a human is not a machine. It is an organism far trickier than any gambling system. Figuratively speaking, our body is a hundredfold more cunning mechanism. It can give the desired response, it can give none or it can compel to suffer instead of the desired relaxation. Like a gambler, an

alcoholic tries repeatedly, but, according to the logic of the addictive process, the result becomes increasingly unpredictable. We can view the problem of control from this unusual perspective. According to this logic, the issues with controlling do not begin at the moment when an alcoholic asks for help or his (her) inappropriate behavior is noticed by people around (Lyvers 2000). It starts when the body is turned into a gambling machine (often unnoticeably).

Our comparison of alcoholism to gambling can be enriched with two other important moments. The desire to become rich overnight fuels the gambler. But it is not so simple with alcohol. We show new reasons of alcohol manipulation gradually, but we have not run out of them yet. The narration of these motives can take a long while. Another important thing is that a quick response is expected from the body's reaction to alcohol. It is similar to gambling, too. Having a drink is associated with getting a hold of joy, confidence and relaxation. All these things can be gained naturally – just remember healthy lifestyle promotions. However, it is not as simple, and (what is more important) not everybody can manage it.

Ironically, this demand for quick responses can be found in search of the methods for giving up the addiction. Alcohol is a cheap pleasure; drinking does not take much effort. Therefore, there comes a burning desire to get a fast-acting pill against a short drink. The illness of an exaggerated thirst for instant solutions to difficult problems creates a false belief in an addict's mind that getting rid of alcoholism is among the quick responses. Let me remind our example with taking a pill and going for a walk. We

can then understand an addict's point of view: "Okay, damn you. I am going to stop drinking, even tomorrow. I agree to take medicine, now leave me alone." It is difficult to explain that this is impossible. Sometimes, it is simpler to go on a leash of an addict and offer aversion therapy (McGuire, Vallance 1964) or certain versions of placebo approaches. Such methods just make drinking harder or less pleasant, but they do not solve the problems that caused the ritual and the automated game-style behavior. In other words, there is still a question: "What shall I do with my unfulfilled desires?" Without an actual answer to this question, the addiction process is just frozen, like Chekhov's gun on the wall that shall eventually fire. There is a remarkable word about it. It is patience. Patience that can help put aside for a long while not only the pleasures but also such vital human needs as food and water. But then, unlike other living beings, a human may constantly feel troubled with an open question: what for?

7. Finding a Way Home (Conceivable Recovery Strategies)

Nowadays, we are living in the world where the order of life is not linear and spiritually logical but rather random. It holds no universal patterns or consistent regularities. Indeed, the mass public no longer takes such things as life aims, a personal devotion or a mission as imperatives for themselves. Zygmunt Bauman's *liquid modernity* (2000) is the prominent concept here. Many social entities are permanently moving and are similar to Heraclitus's *panta rhei* – nothing remains still. Thus, stability is slipped into a state of mind instead of being

a real thing. The ones who still need the plans and strategies for life should develop them, but deeply down, they are hiding intense fears that these constructions are not exactly reality. The modern lifestyle stimulates addictive behavior rather than prevents it. A person who is apt for addiction needs strict discipline as a preventive measure, and a well-scheduled working day is a crucial factor for it. The liquid reality is not in furtherance of this purpose. Even the flourished world is cruel and evil. Nobody is even going to guarantee to a recovering addict a possibility of enjoying prosperity or a stability that sets off each day without a worry in the world. The only things to offer to this person are humility, endurance and patience. But the question of for what and for the sake of whom still remains. The answers to these questions seem clear: to keep your health, to relieve your family from sufferings. One may even use something commonplace: "Be like the entire world," "Live a normal life." But we do not know whether it is a weighty argument for an alcohol addict.

It is observed that alcoholism possesses a lower malignancy as compared to other forms of chemical addiction. For example, an addiction to heroin and cocaine develops more quickly and an unhealthy interest to them appears much earlier. It turns out that addicts that are going down this path at a young age have no ideation of going back. There are no values to prefer to addiction. On the contrary, deliverance from alcohol addiction is possible as a way back. Sometimes, living a quiet, humble life in a tin house cannot be rejected as a desired aim. Few people view their lives as a fiasco if they have never flown to outer space, invented a cure to

a fatal disease or won a Nobel Prize. The social inequality that places us from birth at different social positions can stimulate some movement even in the lower stratification segment. From my point of view, the idea that the addict's destiny to be an addict is incorporated in human genes is not proven. Nevertheless, this phenomenon is common in the case of a potential addict being born in a family of alcoholics with generations of alcoholics in their genealogy. In fact, the addictive behavior model in such a situation is the dominant example that they learn as the only available one. There are socialization programs, including therapeutic communities (Leon 2009), halfway houses (Hitchcock et al. 2009) designed to help such people walk the necessary distance to a normal life.

Sometimes, today's treatment of alcoholism is compared with the way tuberculosis was being treated at the beginning of the earlier century (Sontag 1978): snatch an individual away from an unhealthy environment and send him or her to the highlands or a seacoast. Indeed, it is quite a logical way to fight addiction: to put a customer to certain conditions that give no way for this deviant behavior and – according to the belief of the program founders – help him or her fall in love with a “healthy” lifestyle that could even be led outside of the “treatment” monastery (Dodes, Dodes 2014; Fletcher 2013). However, this makes me remember a classic novel by William Seabrook, called *Asylum* (1935), where he wrote the following:

My physical nerves were less jangled, my hands and mouth had stopped trembling, my general physical condition was perhaps improved, but this was merely because I hadn't been drinking

anything for two long months, and the only reason I hadn't been drinking anything was that I had been locked up where I couldn't get it. (Seabrook 1935; 127)

We are approaching the launch of the discussion on the strategies of recovery. First, I need to express some pessimism. The possibility of complete deliverance from alcoholism is near the borders of a statistical error, which means that work with recovering alcoholics should be individual. The process of social reintegration shall be put first in this with searching of the variants of the reunion of a recovering addict with the world. These strategies should include the help a person needs in finding one's place in social existence with developing a new strategy of life that gives comfort if not stability. Soberness is always a return to the world of everyday life, even if this visit does not last long. As Robert Fleming (1937) observed:

The first stage begins with admission to a suitable hospital. <...> It is interesting to note that without exception near the close of this period the patient's mental state is characterized by great optimism, the inevitable good resolutions, and expressions of a firm conviction that the cure is successful. It is at this point that relatives are so often and ill-advisedly persuaded to remove the patient from the hospital, with the almost certain result of his starting to drink again. No one who has dealt with alcoholic patients for any length of time can have failed to have been struck again and again by the irrational behavior of relatives in this regard. This is especially true of wives who, against advice, will remove their husbands from the hospital because of a faith in their promises of reform that defies description. (Fleming 1937; 781)

We can evaluate the outcomes from alternatives between the depressed realism (Carson et

al. 2010; Haaga, Beck 1995) and the illusions of unrealistic optimism (Hoorens 1994) as the scheme for fastening of the short-term joy in the remission strategy. In other words, unlike science, where the truth is a necessary aim of any activity, everyday life cannot (and should not – according to the concepts we analyzed) be constantly checked for adequacy and correctness (Myers, Brewin 1996; Nabi, Prestin 2016; Shepperd et al. 2017). Thus, certain illusions may be adaptive for mental health and well-being (Shepperd et al. 2017; Taylor, Brown 1988). Unrealistic optimism is promoted with some research and practical implications (Schneider et al. 2015). Unfortunately, the recovering optimism is not a constant thing; it is swift-passing due to the high comorbidity of alcoholism and depression (Gotlib, Hammen 2010; Penberthy et al. 2014; Sindhu et al. 2011).

Nevertheless, hereby we want to shape the positive aspect of any sorts of optimism with comparing them to another alternative. There is the repressive coping style (Truong, Olson and Emery 2016) that involves strategies for inhibiting the expression of feelings and thoughts, which is considered as unpleasant and unacceptable in a certain situation or experience (Moss et al. 2015; Myers 2010). It is natural for every human: a good mood is better than a bad one (Conversano et al. 2010) and optimism is more pleasant than pessimism. These mundane reflections can be further transformed to philosophical meditations and psychological practice. Thus, we come to the thoughts about an absolute meaning of life, to the questions about the essence, nature and limits of happiness. We try

to decide how to reach the emotional welfare and ataraxy of the soul. It may be considered as the preliminary ideal complex, which is opposite to the automated, short-acting stimulus for addictive behavior.

Conclusions

This article has shown that, although the brain impulses either trigger or support alcohol addiction, we can never confine mental activities to certain physical and chemical processes in a human brain, nor can we reduce our life to mere physiological reactions, behavior models and psychological affects. This study has found that the sphere of short responses to simple situations – including as described by the incentive salience hypothesis – is quite limited in human practice. Moreover, the shaping of this sphere of responses to the challenges of reality will be conditional indeed. Our obvious finding lies in that the analysis of the case of addiction should include both neurobiological, psychological social and Dasein dimensions. The cultural context of the development of alcohol addiction should not be disregarded. Further studies on the role of cultural and existential factors in the course of alcoholism, long-term prognosis and the design of recovering strategies will be worthwhile.

A key strength of the present study is the course of alcohol addiction that is interpreted as an instance of the broad philosophical theory of the Self. Where is the end of the social reality and the beginning of the human's internal world? Or, how deep is the non-reflexive structure of our Ego in the biological elements of the brain? The uncertainty of answers in

this case shall be taken for granted by their ontological status. Overall, this study supports the idea that the Self synthesizes, successfully or not, the reactions to biological impulses of a body and the experiences of itself. It also creates responses against many challenges, calls and noises that are made with the environment and manifestations of social life. Finally, this Self maintains the two-way communication with the inherited reward system that is inside and outside of it at the same time.

Full and consistent established equilibrium in this enigmatic work of the Self we may call harmony to be an unattainable and passionately desirable goal for many of us. At the same time, the speculations apropos of this harmony are a key part of the philosophical heritage, a religious thought, a great stimulus for dreams and practices of many insurgents and politicians, for efforts of psychologists and psychotherapists. It was also shown that the pursuit of internal peace is the most important part of the mental efforts of each of us. Our thoughts and actions may be either good or bad. Their results are beneficial or disappointing or even catastrophic for our mind, health and well-being.

The peripeteia of addictive behavior offers such an example of aspiration to a momentary pleasure that leads to new troubles proceeding through a sequence of stages beginning with a deeper dividing of the Self, social stigmatization, social death and, finally, biological death. Thus, we face philosophical challenges. Internally, alcohol may be ideating as a rapid elevator to the Wonderland of dream, happiness, pleasure or calmness. But the best we can say here is that these wishes, wanting and liking act as certain

hacked codes for both the mind and the neurobiology of the brain.

A core component of this study is alcohol experience. We tried to consider it as a whole, to describe its fluidity as some totality and uniqueness at the same time. We have found that this alcohol experience should not be fully integrated into existing or any future theories corrected by rigid methods or firm recommendations. The disclosure of an alcohol experience has accomplished the special philosophical mission. This approach has derived much of its inspiration by the spirit of classical psychoanalysis, which was first in the field of expertise corresponding pathological experience. At the same time, psychoanalysis is considered as the last project of the Enlightenment (Gray 2012; Roudinesco 2008). It is common to cite Freud's reply to the question of fictitious client in that reference. 'You yourself tell me that what I am suffering from is probably connected with my circumstances and fate. You can't change anything about that. So how are you going to help me?' Freud replies:

I do not doubt that it would be easier for fate to take away your suffering than it would for me. But you will see for yourself that much has been gained if we succeed in turning your hysterical misery into common unhappiness. Having restored your inner life, you will be better able to arm yourself against that unhappiness. (Freud, Breuer 2004 [1895]; 306)

The above technique of working in the sphere of the personal experience is often called a *rationalization*. By Freud's foregoing reasoning, the hysterical misery – as a phenomenon of a deep or unconscious experience – can be transformed into an everyday experience of the

common unhappiness. The first type of experience involves mostly suffering, feebleness and anguish. The second one, along with emotions and affects, suggests the possibility of reflection upon itself. In this context, Freud's "common unhappiness" can be considered at least partially as a controlled and self-managed state. It was tempting to invoke this praxis to turn the alcohol experience inside out. It should help one to know oneself deeper. An implication of this approach is the possibility to show the comprehensive picture of the addictive experience. We have tried to build the rationally assembled pattern of this experience from contemplations of addictive drives and cravings, which are hidden behind a narrative cogito. This pattern should arm someone who is interested in struggling with some form of alcohol addiction. This scheme provides opportunities for the self-knowledge and self-construction of the own versions of some alcohol experience. Odd as it must seem, the realities of the alcohol experience are situated in the middle between the two typical alternatives of the addiction scholarship – compulsiveness and rationality of addictive behavior, which we described above. It means that the craving can be (simultaneously or sequentially) both compulsive and rational, and it can even be inspired with something intermediate, for example, short answers and goals or a deep drive for pleasure that is not always rationalized.

Many things that we wrote above are described in an instinctive, conjectural style. On the other hand, this article is a vivid illustration of the intelligible or philosophical method. Many neuroscience concepts that were dis-

cussed in this article are factually only hypotheses. But anyway, if we want to understand the phenomenon called the experience of addiction, such hypotheses may become a starting point of a new complex of modalities – for instance, for philosophy, human psychology and medical sociology.

This article has argued that alcohol addiction is a research area for a large amount of sciences. However, similar to the artists belonging to different schools, the representatives of various sciences and humanities have their own specific vision of this phenomenon. The present study provides evidence with respect to that the approaches to problems of that alcohol addiction should not unite by the object only. It also should be cooperated by searching for practical implications for the multidimensional and transdisciplinary understanding of suffering of the person with alcohol addiction. In this context, the strategies of the deliverance of brain, mind and behavior from hijacking can be viewed as multidisciplinary, interdisciplinary or transdisciplinary in character and directly applicable to such fields as neuroscience, psychology, sociology and philosophy.

The treatment approaches for alcohol addiction have never been an exceptionally medical issue (Hester, Miller 2003; Ries et al. 2014; Ruiz, Strain and Lowinson 2011). The present study develops earlier findings in philosophy of addiction and recovery. Moreover, it adds the following assumptions made in this context. (1) Even in the most difficult cases of addiction, alcohol (unlike analgesics for some cancer patients or insulin for diabetics) is not a substance that is necessary for normal biological

existence. (2) Because alcohol's effects on the brain and body are unclear, its administration can be viewed as a process that adds some chaos to human cognitive or psychological activities. It means that an alcoholic human is a chaotic person that needs (with or without specialists' assistance) rehabilitation or, better to say, reintegration into the existing social structures, from the family to the society in general. (3) Paradoxically, the chaotic alcohol existence is, concurrently, some sort of a stabilization factor for the addicted mind. It means that the addictive experience is something that should be overcome and not rejected. This experience may be actualized with nostalgia that may last for many years. (4) Although, as we said above, the body can survive without any alcohol, the way for recovery will be painful for a long while. It will cause physical and psychological sufferings. The developing of an inferiority

complex is usual. (5) Even if the rehabilitation process proceeds smoothly, relapses are quite probable. The relapses can be observed in all case points where the recovery is likely to stop. (6) The results of this investigation allow to add another (probably arguable) item. We do insist that total abstinence is not just an indicator of recovery from alcoholism – it is the most significant condition thereof. Any excuse from total abstinence can be viewed as a sustained experience of sober life. In my country, they say that you cannot be half-pregnant. The same can be said about sobriety: either it is there, or it is not. Otherwise, we have a very tough alternative. Either the alcohol is involved in the biochemical processes of the mind control or the brain works according to its own rules. An addict's desire to convince himself or herself that he/she can consume alcohol as food will always be a trap.

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SANTRAUKA**LIŪDESIO, DŽIAUGSMO, MALONUMO IR ATLYGIO ĮKALINIMAS: ALKOHOLIZMO TEORIJA IR JOS FILOSOFINĖS PRIELAIDOS**

Straipsnyje plėtojama filosofinė neuromokslų ir psichologijos sąvokų, nusakančių žmogaus priklausomybę nuo alkoholio, interpretacija. Aptariant ahedonijos hipotezę, noro ir mėgavimosi sistemą, paskatos skatinimo hipotezę ir racionalaus pasirinkimo modelį, ne tik pasiūloma išsami tarpdalykinė alkoholizmo teorijų apžvalga, bet ir įvertinamas jų taikymas alkoholikų gydymo ir sveikatinimo praktikoje. Mums svarbu rekonstruoti patirtį, kaip piktnaudžiavimas alkoholiu ilgainiui tampa įprastinės elgsenos modeliu. Todėl straipsnio pabaigoje pasiūloma platesnė žalingo įpročio sąvokos interpretacija, leidžianti šį reiškinį suvokti kaip atlygio sistemos sutrikimą ir įvertinti šios sąvokos pritaikomumą kognityvinei bei elgesio terapijai.

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